Scoping Document, April 2021
Permit Renewal for USGS Stream Gauging Stations

USDA FOREST SERVICE
Humboldt-Toiyabe National Forest
Bridgeport Ranger District
Carson Ranger District
Ely Ranger District
Mountain City Ranger District
Austin-Tonopah Ranger District
Spring Mountains National Recreation Area

Background
The Humboldt-Toiyabe National Forest (HTNF) has over 700 lands special use permits and by the end of calendar year 2019, nearly 250 of them will have expired. The Forest is working to reduce the backlog by contacting holders and processing applications for renewal.

In 2012, a nation-wide audit by the office of inspector general reported findings regarding the condition of special uses on National Forests. The report identified the serious backlog of special use authorizations and the subsequent loss of revenue to the treasury, as well as the lack of management of the uses. In answer to this issue, the Washington Office has made it a priority to remedy the backlog and given money to the regions to expedite the process. These SUAs are a result of this effort to bring the district's special use program to a more current state.

The backlog of expired lands special use authorizations on the HTNF includes (permits, leases, and easements) located across multiple districts including a variety of different uses such as right-of-ways for (power, telephone, fiber, water, sewer), communication sites (public safety, emergency response, cellular, TV, Radio), road access, water impoundments and transmission lines.

Purpose/Need
The purpose is to renew expired authorizations and bring them into compliance with current permit terms and conditions and policy direction. Permit holders are requesting their use be reauthorized. If we continue to allow authorization holders to carry expired authorizations, it unnecessarily encumbers NFS lands and restricts the land availability for other public uses.

Proposed Action
The proposed action is to consolidate all expired permits and a few permits that are not expired into one Master Special Use Permit for existing uses to USGS. There are no changes to existing improvements or scope or intensity of the use. The table below summarizes the stream gauging stations that would be authorized under a single master permit.

Applicable CE Category. Issuance of a new special use authorization to replace an existing or expired special use authorization, when such issuance is to only account for administrative changes, such as a change in ownership of authorized improvements or expiration of the current

authorization, and where there are no changes to the authorized facilities or increases in the scope or magnitude of authorized activities. 32.12 (11)

Project Location

The project sites are located on the Bridgeport, Carson, Ely, Mountain City, Austin-Tonopah Ranger Districts and Spring Mountains National Recreation Area of the Humboldt-Toiyabe National Forest. Table 1 provides the names, legal land descriptions, and acreage of each site. Table 2 provides additional site information for TON000903.

Table 1. Stream Gauging Stations locations on HTNF

District	Use	Authorization ID and Contact Name	General Legal Description	Approximate Acreage	Location	Locations in USGS dataset
Austin, Tonopah, Bridgeport	941 – Stream Gauging Station	TON000903 - USGS	See table below- covered multiple districts			
Photo 1 Austin	Stream Gauge		T16N, R43E, Sec 35 39°12'45" 117°06'45"	4 x 4 x 8 ft plywood shelter	Kingston Creek below Cougar Canyon	Y
Photo 2 Tonopah	Stream Gauge		T12N, R42E, Sec 22 39°53'15" 117°14'40"	42-inch CMP shelter on a 6-ft well section	South Twin Rivers, Round Mtn.	Y
Photo 3 Bridgeport	Weighted Wire Gauge		T4N, R24E, Sec 28 38°10'05" 119°19'33”	2ft. x 2ft. x 1ft.	Lower Twin Lakes Wire weight gauge on dam	Y
Bridgeport	Stream Gauge		T4N, R24E, Sec 27 38°10'20" 119°19'25"	2ft. x 2ft.	Robinson Creek	Y
Bridgeport	Stream Gauge		T5N, R24E, Sec 23 38°16'58" 119°17'56"	42-inch CMP well shelter 2 inch galvanized steel pipe	Swauger Creek	Y
Photo 4	Stream Gauge		T4N, R24E,	42-inch CMP	Buckeye	Y

Bridgeport			Sec 4 38°14'20" 119°19'30"	well shelter 2 inch galvanized steel pipe	Creek	
Photo 5 Bridgeport	Stream Gauge		T6N, R25E, Sec 34 38°19'40" 119°12'50"	36-inch corrugated metal pipe shelter on an 8 ft well section, 2" x 6" plank	East Walker River, downstream of Bridgeport Reservoir	Y
Photo 6 Bridgeport	Stream Gauge		38°26'27" 119°06'18"	2'x2' steel box shelter	Sweetwater Creek	Y
Photo 7 Carson	814 – Resource Monitoring Station Change use code via SUDS ticket to 941, wrong permit form.	CAR152	T19N, R19E, Sec 19 39°29'42.4" 119°53'40.2"	Description 5'x5'x7' steel shelter, crest stat gauge 2 inch diameter pipe attached 4"x4" post	Hunter Creek	Y
Photo 8 Carson			39°00'02" 119°51'00"	6.1 ft length of 2-in pipe	Genoa Canyon Creek	Y
Photo 9 Carson			39°07'29" 119°47'34"	6.1ft length of 2-in pipe on wooden 4X6 inch post	Voltaire Canyon, Near CC	Y
Photo 10 Ely			39°14'30" 115°32'36"	12-ft x 12-inch diameter aluminum cylinder mounted on a 3x3 base	Mt. Hamilton	Y
Photo 11 Ely			38°11'57.00" 115°37'34.10"	12-ft x 12-in" diameter aluminum cylinder mounted on a 3x3 base	Quinn	Y

Photo 12 SMNRA	Stream Gauge		36°15'26.10" 115°37'39.22"	13 ft long, 2 inch diameter pipe	Rainbow Canyon Diversion	Y
Photo 13 Ruby Mtns			40°41'27" 115°28'34"	2-inch galvanized pipe line, steel bubbler	Lamoille Creek, NR Lamoille	Y
Photo 14 Mtn. City			41°41'15" 115°50'37"	6 x 5 ft wooden building	Wildhorse Res. Near Gold Creek	Y
Photo 15 Mtn. City			41°41'20" 115°50'38"	4- by 4-ft.-square cinder-block shelter	Owyhee RV NR Gold Creek	Y
Photo 16 Mtn. City			41°56'00" 115°40'25"	36-in. diameter CMP shelter, Solar panel	Bruneau RV at Rowland NV	Y
Photo 17			39°12'05.54" 114°41'20.98"	2x2x3 ft shelter on stilts (1.20 to 3.34 ft) 2 by 6 ft plank 6 inch channel iron	Steptoe Creek, NR Ely, NV	Y
Photo 18			38°19'40" 119°12'50"	36-inch corrugated metal pipe shelter on an 8 ft well section on right bank 2 x 6" plank	E. Walker River NR Bridgeport, CA	Y
Photo 19			38°22'47" 119°26'57"	5'x7' Sutron Satlink-2 data collection	W. Walker River Below L Walker	Y

				platform	River NR Coleville, CA	
Photo 20			38°41'35.64" 119°31'13.11"	6 x 6 ft cement block building	Topaz Lake NR Topaz, CA	Y
Photo 21			38°43'41.03" 119°25'40.3"	3’ steel self-contained bubbler system	W. Walker River at Hoye Bridge NR Willington, NV	Y
Photo 22			38°50'42.7" 119°42'21.9"	2x2x2 metal look-in shelter on 2” galvanized pipe supports	E. Fork Carson River NR Garnerville, NV	Y
Photo 23			38°52'44.47" 119°42'09.76"	4 ft high and 2 inch diameter steel pipe	Indian CK Abv Mouth NR Gardnerville, NV	Y
Photo 24			38°46'11" 119°49'58"	5x5 steel rectangular building	W Fk Carson River at Woodfords, CA	Y
Photo 25			38°57'52.20" 119°50'57.55"	42-inch CMP well shelter 2 inch galvanized steel pipe	Daggett CK NR Genoa, NV	Y
Photo 26			39°09'14" 119°48'25"	Steel Tennessee type shelter, 2 inch galvanized steel pipe	Kings Cyn CK NR Carson City, NV	Y
Photo 27			39°10'35" 119°48'17"	42-inch CMP well shelter 2 inch galvanized steel pipe	Ash Cyn CK NR Carson City, NV	Y
Photo 28			39°31'28"	Sutron	Dog CK at	Y

			119°59'40"	Satlink 2 transmitter housed in a steel enclosure	Verdi, NV	
Photo 29			39°12'08.2" 119°52'15.9"	Steel Tennessee type shelter, 2 inch galvanized steel pipe	Franktown CK NR Carson City, NV	Y
Photo 30			41°53'26" 115°25'40"	A walk in style metal gage house, solar panel	Jarbidge River below Jarbidge, NV	Y
Photo 31			36°17'17.17" 115°40'10.90"	12-ft x 12-in" diameter aluminum cylinder collector, mounted on a 3x3 base	Mt. Charleston	Y
Photo 32			36°22'38.59" 115°46'27.93"	12-ft x 12-in" diameter aluminum cylinder collector, mounted on a 3x3 base	Trough Spring	Y

Photo 1. KINGSTON CK BLW COUGAR CYN NR AUSTIN, NV – stream gage

GAGE- A Sutron SatLink2 data collection platform collects and transmits data from a Sutron Accububble. Equipment is housed in a 4 x 4 x 8 ft plywood shelter on the left bank. The outside gage is a staff plate (primary gage) secured to a board, mounted to a rock, on the right bank. A crest-stage gage is mounted to the rock adjacent to the staff plate and is available for peak confirmation.

Photo 2. S TWIN RV NR ROUND MOUNTAIN, NV – stream gage

GAGE.-- A Sutron SatLink2 collects and transmits data from a Sutron Accububble Bubbler and Sutron AquaTemp temperature sensor. Equipment is housed in a standard 42-inch CMP shelter on a 6-ft well section on the right bank. The pressure sensor is connected to the stream through the old orifice line. The outside staff (base gage) is an enameled staff plate ranging from 1.00 ft to 4.80 ft. A crest-stage gage is available to confirm peaks.

Photo 3. Lower Twin Lakes

Wire weight gauge on dam

Photo 4. Buckeye Creek

A Sutron Satlink2 data logger/transmitter is interfaced with an Accububble automated bubbler set to record at 15 minute intervals. Bubbler is connected to the stream via a 2 inch galvanized steel pipe that ends near the lower staff plate. Outside staffs are primary reference gages.

Photo 5. E WALKER RV NR BRIDGEPORT, CA - streamgage

GAGE- A Sutron Satlink 2 collects and transmits data from a Sutron incremental shaft encoder Model Number 5600-530-1A. The recorder is housed in a 36-inch corrugated metal pipe shelter on an 8 ft well section on right bank. The primary reference gage is an electric tape gage (ETG) mounted to a shelf inside the stilling well. Recorder is referenced to the inside gage and is equipped with a float tape index. The outside gage consists of enameled staff sections graduated to even hundredths, reading from 2.30 to 5.70 ft and attached to a 2 x 6" plank bolted to a grader blade near intakes on right bank. A small staff section reading 5.60 to 6.40 ft is mounted on outside of gage house on streamward side. Pressure clips are attached to the float tape for confirming maximum and minimum stage between site visits.

Photo 6. Sweetwater Creek

Sutron Satlink/Accububble system. The equipment is housed in a Tennessee-type shelter. All electrical equipment is recharged via two solar panels, two batteries, and one regulator. A Crest Stage Gage is available to verify recorded peaks.

Photo 7. HUNTER CK NR RENO, NV - streamgage

GAGE.-- A Sutron Satlink 2 and a Sutron Accububble are housed in 3x3 ft free standing metal shelter on left bank. Approximately 35 ft of 3/8-inch orifice line (within a 2-inch steel galvanized pipe) provides communication between the channel and the gage. Orifice cap is standard 2" steel. The datalogger, DCP is referenced to an outside staff (base gage) consisting of a 2x6 plank bolted to steel backing and set in concrete on the left bank at the orifice. Enameled staff sections graduated to even hundredths reading from 6.30 to 10.10 ft are attached to the 2x6 plank. A crest-stage gage is also mounted on the steel backing on the other side the enameled staff sections.

Photo 8. GENOA CYN CK AT GENOA, NV – crest stage gage

GAGE - The crest-stage gage consists of a vertical 6.1 ft length of 2-in pipe on the base of a large tree on left bank. CSG moved upstream 20 ft and staff installed on 09/16/2014 on right bank.

Photo 9. VOLTAIRE CYN NR CARSON CITY, NV – crest stage gage

GAGE -The crest-stage gage consists of a vertical 6.1ft length of 2-in pipe on wooden 4X6 inch post near right bank located. Gage elevations: pin 4.508 ft, gage datum. (Levels of Sept. 25, 2008). The CSG and post was found severely damaged on September 16, 2013 due to carpenter ants eating the base of the wooden post. A new metal base and CSG was installed on October 21, 2013 and levels were run shortly after.

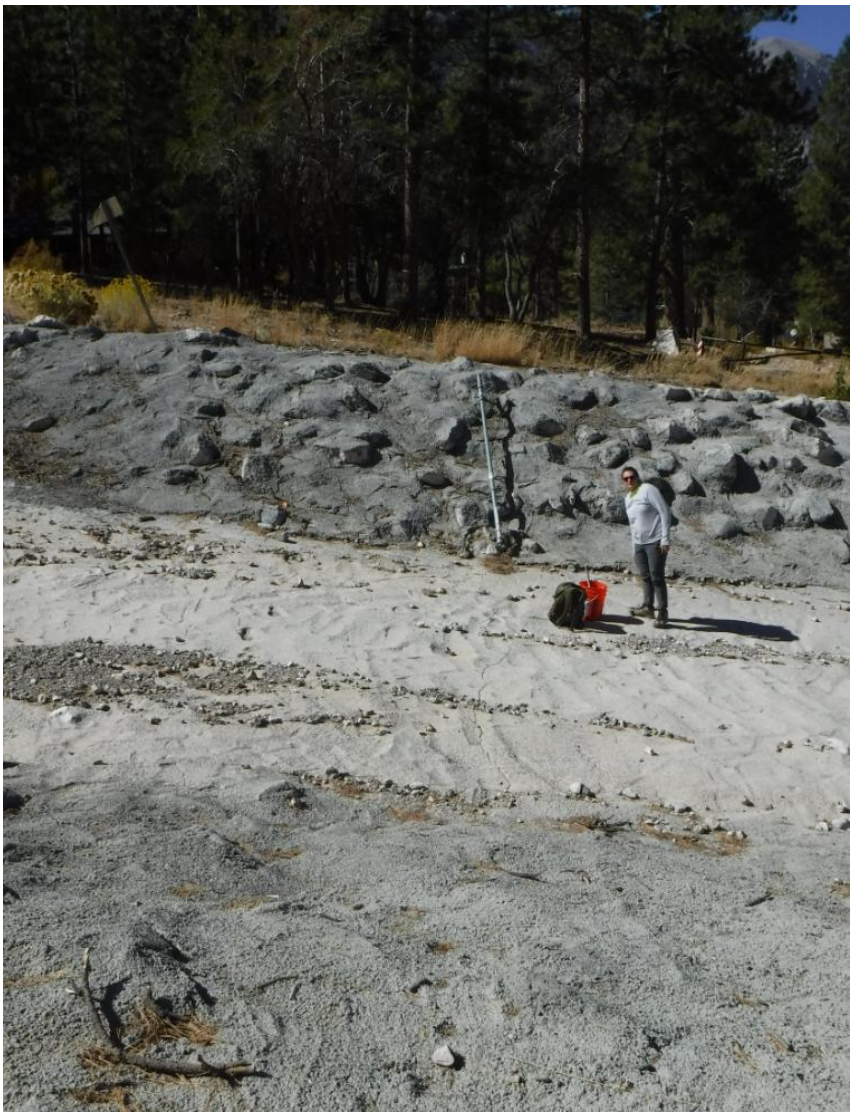
Photo 10. BULK PRECIPITATION - MT HAMILTON – bulk precipitation gage

GAGE- is a vertical 12-ft x 12-in" diameter aluminum cylinder collector, mounted on a 3x3 base with four stabilizer fins. A wind baffle is attched to the top of the collector along with 3 guide wires. There are a total of four valves attched to the gage. Drain valve, read valve, upper port valve for filling, and lower port valve for emptying and mucking the

Photo 11. Quinn Canyon Range Precipitaiton Gage – bulk precipitation gage

GAGE- is a vertical 12-ft x 12-in" diameter aluminum cylinder collector, mounted on a 3x3 base with four stabilizer fins. A wind baffle is attached to the top of the collector along with 3 guide wires. There are a total of four valves attached to the gage. Drain valve, read valve, upper port valve for filling, and lower port valve for emptying and mucking the gage.

Photo 12. RAINBOW CYN AT MT CHARLESTON, NV – crest stage gage



GAGE- CSG is a 13 ft long, 2 inch diameter pipe, incline mounted to concrete rip-rap secured to channel bottom and side, 100 ft upstream of construction road that crosses wash on the LEW. The CSG stick is 12.7 ft. in length and covers a range of stage from pin elevation of 39.754 ft. to top of stick elevation 45.266 ft.

A mounted game camera on site records channel conditions every 15 minutes assist in capturing small flows below CSG pin. This camera is downloaded every site visit.

Photo 13. LAMOILLE CK NR LAMOILLE, NV - streamgage

GAGE- The current equipment at this gage consists of a SL2 data logger paired with a DA h-355 waterlog bubbler in a CMP-style gage house. The bubble orifice line is in a 2-in.-galvanized pipe extending 50ft downstream and fastened to the right edge of the stream to a large boulder. The reference gage is an outside staff gage fastened to the boulder near the orifice. A crest-stage gage is located next to the OSS. Altitude of gage is 6,240 ft (from topographic map). Time lapse camera is available at the gage.

Photo 14. Wildhorse Reservoir near Gold Creek

A Sutron Satlink2 (DCP) collects and transmits data from a Design Analysis H-355 bubbler and a Sutron Accubar pressure sensor. The gage is housed in a 6 x 5 ft wooden building

Photo 15. OWYHEE RV NR GOLD CK, NV – stream gage

GAGE.-- A Sutron Satlink DCP is connected to a Sutron Accububble Self Purging system. The equipment is housed in a 4- by 4-ft.-square cinder-block shelter. The bubble orifice was originally a 2-in.-galvanized pipe anchored in concrete. The pipe and orifice line was replaced, reburied at the road crossing, and stabilized with t-posts on 9/11/18, following fire damage. The Outside Staff gage (0.00 to 3.34 ft.) is the base gage located on the left bank near orifice line. A CSG is located downstream of the orifice and used for peak gage height verification.

Photo 16. BRUNEAU RV AT ROWLAND, NV – streamgage

GAGE- A Sutron Satlink2 with a Sutron Accububble, powered by a solar panel, are in a 36-in. diameter CMP shelter. The orifice is in a 2-in.-galvanized pipe fastened to the bedrock ledge at the left edge of the stream. An OSS (base gage) is located next to the orifice pipe on the left bank ledge. A CSG is mounted to the OSS post and used for peak stage verification. A time-lapse camera is available at this site to assist in record computation. This camera takes picture of the control 1-2 times per day. Altitude of gage is 4,500 ft, from topographic map.
A lightweight bank operated cableway 600ft downstream of the gage is available for making high flow mmts.

Photo 17. STEPTOE CK NR ELY, NV - streamgage

GAGE- All instrumentation is housed in a 2x2x3 ft shelter on stilts. Gage height is recorded using a Satlink satellite transmitter with a Sutron Accububble self-purging pressure transducer. The base gage (primary reference) is the outside staff plate which is an enameled steel plate (1.20 to 3.34 ft) fastened to a 2 by 6 ft plank in a piece of 6 inch channel iron which is set in concrete on left bank near the orifice. A CSG is bolted next to the outside staff.

Photo 18. E WALKER RV NR BRIDGEPORT, CA - streamgage

GAGE- A Sutron Satlink 2 collects and transmits data from a Sutron incremental shaft encoder Model Number 5600-530-1A. The recorder is housed in a 36-inch corrugated metal pipe shelter on an 8 ft well section on right bank. The primary reference gage is an electric tape gage (ETG) mounted to a shelf inside the stilling well. Recorder is referenced to the inside gage and is equipped with a float tape index. The outside gage consists of enameled staff sections graduated to even hundredths, reading from 2.30 to 5.70 ft and attached to a 2 x 6" plank bolted to a grader blade near intakes on right bank. A small staff section reading 5.60 to 6.40 ft is mounted on outside of gage house on streamward side. Pressure clips are attached to the float tape for confirming maximum and minimum stage between site visits.

Photo 19. W WALKER RV BLW L WALKER RV NR COLEVILLE, CA – streamgage

GAGE- A Sutron Satlink-2 data collection platform (DCP) collects and transmits data from a radar water level sensor (SDI-12) and an analog thermistor with a radiation shield that measures air temperature. There are two outside staff gages located approximately 30 ft upstream of the bridge on the left bank, both staff gages have crest-stage gages mounted on back of each I-beam for referencing high water marks. The lower staff is the primary reference gage and ranges from 2.42 to 6.72 ft, and the upper staff ranges from 5.92 to 10.14 ft. During periods of low flow, when the staff is dry, there are two t-post available for reference points.

Photo 20. TOPAZ LAKE NR TOPAZ, CA – lake gage

GAGE- A Sutron Satlink2 (DCP) collects and transmits data from a Design Analysis H-355 bubbler and a Sutron Accubar pressure sensor. The gage is housed in a 6 x 6 ft cement block building located on the north shore, west of the boat launch area. The pressure sensor is referenced to the reference marks or one of the reference points located along the boat launch area near the gage house, opposite the gage house, and along the orifice line. Staff plates have been set by levels run from RM-1 and are located on the trash rack at the outlet about 1/4 mile east of the gage (though not part of recent levels runs). Elevation is calculated by adding 4900.00 ft to the DCP output.

Photo 21. W WALKER RV AT HOYE BRG NR WELLINGTON, NV - streamgage

GAGE- Equipment at this site consists of a Sutron Satlink 2 DCP that collects and transmits data from a DA H-355 self-contained bubbler system connected to a Sutron Accubar non-submersible pressure transducer. Upper, middle, and lower staffs are used as references. A CSG connected to the lower staff is available to confirm peaks. Equipment is housed in a CMP. Bank-operated cableway located at gage for discharge measurements (Note for USFS: The cable

stretching across the river on the left side of the photo shows the cableway. We inspect these structures yearly for safety and remediate any problems found.)

Photo 22. E FK CARSON RV NR GARDNERVILLE, NV – streamgage

GAGE- Gage consists of a Satlink-2 data collection platform interfaced with a Sutron accububble pressure transducer self purging system in a 2x2x2 metal look-in shelter on 2″ galvanized pipe supports. The transducer is set to agree with the outside staffs or a series or low water RPs. A upper and lower crest-stage gages are installed on a 6x6-inch redwood post near the outside staffs. A trail camera was installed in Feb of 2014 to aid in ice estimations. ADCP cableway located at gage.

Photo 23. INDIAN CK ABV MOUTH NR GARDNERVILLE, NV – crest stage gage

GAGE- A 4 ft high and 2 inch diameter steel pipe (crest stage gage) attached to a large boulder on the left bank located 4,000 ft (0.75 mi) above confluence with East Fork Carson River and 5.0 mi south of Gardnerville, NV. A fence post (RP-2) located in gage pool near the left bank approximately 15 ft downstream of CSG can be used to determine stage.

Photo 24. W FK CARSON RV AT WOODFORDS, CA - streamgage

GAGE- Sutron Satlink DCP logging gage-height from a Accububble system. Recorder is referenced to outside staff gage. Crest-stage gages are available for reference and confirming recorded peaks. All equipment is located in a 5x5 steel rectangular building on the left bank.

Photo 25. DAGGETT CK NR GENOA, NV - streamgage

GAGE- A Sutron Satlink2 data logger/transmitter is interfaced with an Accububble automated bubbler set to record at 15 minute intervals. Located in 42-inch CMP well shelter on left bank. Bubbler is connected to the stream via a 2 inch galvanized steel pipe that ends near the lower staff plate. Outside staffs are primary reference gages. New staff and CSG put into use on 05/08/2015.

Photo 26. KINGS CYN CK NR CARSON CITY, NV - streamgage

GAGE- Satlink II with Sutron Accububble transducer installed in Tennessee type shelter on right bank. Old gage was destroyed in the Water Fall Fire in the summer of 2004. New Staff and CSG put into use on 05/08/2015. Outside staff is primary gage. Altitude of gage is 5,180 ft (1,580 m) from topographic map.

Photo 27. ASH CYN CK NR CARSON CITY, NV - streamgage

GAGE- Accububble pressure sensor interfaced with Satlink Data Collection Platform (DCP) in a CMP-style gage house. Stage is recorded in 15 minute intervals. Alert threshold set to 3.86 ft. Recorder is connected to the stream with a 2-inch galvanized pipe with standard orifice cap. Orifice is located on left bank near outside staff which is the primary reference gage. Altitude of gage is 5080 ft (1548 m), from topographic map. A time lapse camera is located downstream to monitor control conditions.

Photo 28. DOG CK AT VERDI, NV - streamgage

GAGE- Sutron Satlink 2 transmitter housed in an enclosure connected to a Sutron Accububble pressure sensor. The gage is connected to the stream by an orifice line. The Accububble sensor is referenced to an outside staff gage (the base gage) located approx. 8 ft. upstream of the orifice. There is another outside (high water) staff gage is a 4"X6" plank with enameled plates bolted to the left wing wall of the bridge; which is in another gage pool during low to moderate flows. There are two Crest Stage Gages (CSGs); one is bolted to the left wing wall near the high water outside staff and is used to obtain high water marks and another CSG is located on the staff backing which is 8 ft upstream of orifice.

Photo 29. FRANKTOWN CK NR CARSON CITY, NV - streamgage

GAGE.--Sutron Satlink/Accububble system. The equipment is housed in a Tennessee-type shelter on the right bank. The recorder is referenced to the outside staff (base gage). All electrical equipment is recharged via two solar panels, two batteries, and one regulator. A Crest Stage Gage is available to verify recorded peaks.

Photo 30. JARBIDGE RV BLW JARBIDGE, NV – streamgage

GAGE- A walk in style metal gage house houses a Sutron Satlink 2 Data Collection Platform that has logging and GOES capabilities connected to a Sutron self-purging pressure transducer. A 12v battery with a solar panel provides power. As of 08/18/2015, a new OSS and CSG have been installed immediately adjacent to RP-4 on the left bank, 5 ft. upstream from orifice. The OSS is the new primary stage reference for most flows.

Photo 31. Bulk Precipitation - Mt Charleston – bulk precipitation gage

GAGE- is a vertical 12-ft x 12-in" diameter aluminum cylinder collector, mounted on a 3x3 base with four stabilizer fins. A wind baffle is attached to the top of the collector. There are a total of four valves attached to the gage. Drain valve, read valve, upper port valve for filling, and lower port valve for emptying and mucking the gage.

Photo 32. Trough Spring Bulk Precipitation Gage – bulk precipitation gage

GAGE- is a vertical 12-ft x 12-in" diameter aluminum cylinder collector, mounted on a 3x3 base with four stabilizer fins. A wind baffle is attached to the top of the collector. There are a total of four valves attached to the gage. Drain valve, read valve, upper port valve for filling, and lower port valve for emptying and mucking the gage.